

What is claimed is:

- 1 1. A method comprising:
2 generating a first signal having a fundamental frequency;
3 modulating an input signal with the first signal; and
4 tuning the modulation to a harmonic of the fundamental frequency to produce a
5 modulated signal having a carrier frequency near the harmonic.
- 1 2. The method of claim 1, wherein the modulated signal has substantially more
2 spectral energy near the harmonic than near the fundamental frequency.
- 1 3. The method of claim 1, wherein the tuning comprises:
2 establishing a filtering passband for the modulation, the passband including
3 frequencies near the harmonic.
- 1 4. The method of claim 1, wherein the tuning comprises:
2 filtering out spectral energy of the modulated signal near the fundamental frequency.
- 1 5. The method of claim 1, wherein the harmonic comprises an odd harmonic.
- 1 6. The method of claim 1, wherein the input signal comprises a complex signal.
- 1 7. The method of claim 1, wherein the modulating comprises:
2 providing the input signal and the carrier signal to at least one Gilbert cell multiplier.
- 1 8. The method of claim 1, wherein the tuning comprises:
2 coupling a bandpass filter to output terminals of at least one Gilbert cell multiplier.

1 9. A system comprising:
2 an oscillator to generate a first signal having a fundamental frequency;
3 a modulator to modulate an input signal with the first signal; and
4 a filter coupled to the modulator to tune the modulation to a harmonic of the
5 fundamental frequency to produce a modulated signal having a carrier frequency near the
6 harmonic.

1 10. The system of claim 9, wherein the modulated signal has substantially more
2 spectral energy near the harmonic than near the fundamental frequency.

1 11. The system of claim 9, wherein the filter establishes a passband for the
2 modulation, the passband including frequencies near the harmonic.

1 12. The system of claim 9, wherein the filter filters out spectral energy located
2 near the fundamental frequency.

1 13. The system of claim 9, wherein the harmonic comprises an odd harmonic.

1 14. The system of claim 9, wherein the input signal comprises a complex signal.

1 15. The system of claim 9, wherein the modulator comprises at least one Gilbert
2 cell multiplier.

1 16. The system of claim 9, wherein the filter comprises a band pass filter.

1 17. A transmitter comprising:

2 a modulation system to:

3 receive a first signal having a fundamental frequency,

4 receive an input signal, and

5 modulate the input signal with the first signal to produce a modulated signal

6 having a carrier frequency near a harmonic of the fundamental frequency of the first signal;

7 and

8 circuitry to communicate the modulated signal to a communication medium.

1 18. The transmitter of claim 17, wherein the modulation system comprises:

2 a modulator to modulate the input signal with the first signal; and

3 a filter coupled to the modulator to tune in the modulation to a harmonic of the
4 fundamental frequency to produce the modulated signal.

1 19. The transmitter of claim 18, wherein the filter establishes a passband for the
2 modulation, the passband including frequencies near the harmonic.

1 20. The transmitter of claim 18, wherein the filter filters out spectral energy of the
2 second signal located near the fundamental frequency.

1 21. The transmitter of claim 18, wherein the filter comprises a bandpass filter.

1 22. The transmitter of claim 17, wherein the harmonic comprises an odd
2 harmonic.

1 23. The transmitter of claim 17, wherein the input signal comprises a complex
2 signal.

1 24. The transmitter of claim 17, wherein the modulator comprises at least one
2 Gilbert cell multiplier.

1 25. A method comprising:
2 receiving a first signal having a fundamental frequency; and
3 modulating an input signal with the first signal to produce a modulated signal having
4 a carrier frequency near a harmonic of the first signal.

1 26. The method of claim 25, wherein the modulated signal has substantially more
2 spectral energy near the harmonic than near the fundamental frequency.

1 27. The method of claim 25, further comprising:
2 filtering out spectral energy located near the fundamental frequency.

1 28. The method of claim 25, further comprising:
2 tuning a filter to pass spectral energy of the modulated signal located near the carrier
3 frequency.

 29. The method of claim 25, wherein the harmonic comprises a third harmonic.

 30. The method of claim 25, wherein the modulating comprises:
 providing the input signal and the carrier signal to at least one Gilbert cell multiplier.